

## Claims

[c1] What is claimed is:

1. A wireless network comprising:  
a first wireless device;  
a second wireless device measuring the signal strength of a signal received at the second wireless device from the first wireless device;  
a third wireless device measuring the signal strength of a signal received at the third wireless device from the first wireless device; and  
a fourth wireless device measuring the signal strength of a signal received at the fourth wireless device from the first wireless device;  
wherein the fourth wireless device selects a nearest wireless device being either the second wireless device or the third wireless device according to the measured signal strengths.

[c2] 2. The wireless network of claim 1, wherein the measured signal strengths are stored in a single signal table in the first wireless device, stored in a plurality of signal tables distributed among the wireless devices, or periodically broadcast on the wireless network.

- [c3] 3The wireless network of claim 1, wherein the second, third, and fourth wireless devices are positioned substantially on a line extending from the first wireless device.
- [c4] 4.The wireless network of claim 1, wherein the fourth wireless device determines a plurality of nearest wireless devices.
- [c5] 5.The wireless network of claim 1, further comprising:
  - a fifth wireless device measuring the signal strength of a signal received at the fifth wireless device from the first wireless device;
  - wherein the second, third, and fourth wireless devices further measure the signal strength of a signal received at the second, third, and fourth wireless devices from the fifth wireless device, respectively.
- [c6] 6.The wireless network of claim 5, wherein the second, third, and fourth wireless devices are positioned in an area being to one side of a line formed between the first wireless device and the fifth wireless device.
- [c7] 7.The wireless network of claim 5, wherein the fourth wireless device determines a plurality of nearest wireless devices.

- [c8] 8.The wireless network of claim 5, further comprising: a sixth wireless device measuring the signal strength of signals received at the sixth wireless device from the first wireless device and from the fifth wireless device; wherein the second, third, and fourth wireless devices further measure the signal strength of a signal received at the second, third, and fourth wireless devices from the sixth wireless device, respectively.
- [c9] 9.The wireless network of claim 8, wherein the first, fifth, and sixth wireless devices are access points; the second and third wireless devices are service providing devices; and the fourth wireless device is a portable device.
- [c10] 10.A method of determining a nearest wireless device in a wireless network, the method comprising: providing first, second, third, and fourth wireless devices; measuring the signal strength of a signal received at the second wireless device from the first wireless device; measuring the signal strength of a signal received at the third wireless device from the first wireless device; measuring the signal strength of a signal received at the fourth wireless device from the first wireless device; and determining the nearest wireless device being nearest to the fourth wireless device according to the measured signal strengths, the nearest wireless device being either

the second wireless device or the third wireless device.

- [c11] 11. The method of claim 10, further comprising storing the measured signal strengths in a single signal table in the first wireless device or a plurality of signal tables distributed among the wireless devices, or periodically broadcasting the measured signal strengths on the wireless network.
- [c12] 12. The method of claim 10, further comprising positioning the second, third, and fourth wireless devices substantially on a line extending from the first wireless device.
- [c13] 13. The method of claim 10, further comprising determining a plurality of nearest wireless devices.
- [c14] 14. The method of claim 10, further comprising:
  - providing a fifth wireless device;
  - measuring the signal strength of a signal received at the fifth wireless device from the first wireless device; and
  - measuring the signal strength of a signal received at the second, third, and fourth wireless devices from the fifth wireless device, respectively.
- [c15] 15. The method of claim 14, further comprising positioning the second, third, and fourth wireless devices in an area being to one side of a line formed between the first

wireless device and the fifth wireless device.

- [c16] 16. The method of claim 14, wherein the fourth wireless device determines a plurality of nearest wireless devices.
- [c17] 17. The method of claim 14, further comprising:
  - providing a sixth wireless device;
  - measuring the signal strength of a signal received at the sixth wireless device from the first wireless device and from the fifth wireless device; and
  - measuring the signal strength of a signal received at the second, third, and fourth wireless devices from the sixth wireless device, respectively.
- [c18] 18. The method of claim 17, wherein the first, fifth, and sixth wireless devices are access points; the second and third wireless devices are service providing devices; and the fourth wireless device is a portable device.